## THE SYRACUSE HEALTH DEMONSTRATION

### *Poliomyelitis in Syracuse*

Although numerically not conspicuous in comparison with other contagious diseases that have appeared in Syracuse this year so far, poliomyelitis, or infantile paralysis, has nevertheless monopolized public interest as well as official concern in that community since its appearance there.

The apparently unrelated, mysterious development of cases, and above all, the unfortunate crippling paralysis which the disease is apt to leave in its wake, are essentially the reasons for public alarm, while difficulty in recognizing the disease early and consequent difficulty in promptly controlling its spread are sufficient cause for worry to the health official.

Up to October first, 131 cases have come under the care and supervision of the health authorities since the beginning of the present outbreak late in May, 1924.

Fortunately, the enlargement of the Bureau of Communicable Diseases has made it possible for the Syracuse Health Department, under the administration of Commissioner Thomas P. Farmer, not only to investigate every one of the cases reported, but also by lumbar puncture and other suitable methods of examination, to arrive at an earlier diagnosis.

Thus in fifty-one out of a total of 131 cases, a diagnosis was made within forty-eight hours after the onset of the acute illness. This is in marked contrast to the outbreak in 1922 when diagnosis within forty-eight hours was made in only three cases out of a total of forty-eight reported.

It is also gratifying to note that with the use of human immune serum, obtained in part from the New York State Department of Health and in part locally, recovery followed in seven out of every nine cases that were treated within twenty-four to forty-eight hours after the disease was contracted. A total of fifty-one cases received serum. Of these, twelve went on to paralysis despite the use of serum. Concerning these twelve cases, Dr. A. Clement Silverman, Chief of the Communicable Disease Bureau, reports as follows: "Three of these were beginning to show muscle weakness and diminished reflexes at the time of serum injection. One case developed a transient weakness of one shoulder which disappeared in one week. One case was given serum by a private physician after a frank paralysis had developed."

Obviously these apparent results must be accepted with reservation until a larger number of observations can prove or disprove them. Nevertheless, it is significant that with earlier diagnosis and earlier treatment, the case mortality in the present outbreak so far has shown but eight deaths in 131 cases, which is well below the average mortality rate for the local outbreak in 1922, which showed 20 per cent mortality. It is, of course, quite probable that in the latter outbreak many cases were missed so that the mortality to the number of known cases consequently became abnormally high.

It is still too soon to say what the final outcome of the present outbreak will be. Apparently, however, the high point of the outbreak was reached toward the end of July.

In its general features, the present outbreak follows the usual manifestations. It is essentially "juvenile". Of the cases having occurred thus far, 95.4 per cent are children of sixteen years or less. Of these, 55.7 per cent happened in

children of five years or less and in this group the child of three years is the most frequent victim. This latter point is of some interest since in the earlier, more marked, local outbreaks, of 1916 and 1922, the age periods of one and two years, respectively, suffered most conspicuously.

In the present outbreak the oldest patient is a male, forty-three years of age, and the youngest, an infant, three and one-half months old. There are almost twice as many cases among males as among females.

Nothing new so far has come to light to change the present views as to the epidemiology of this disease. It appears that the disease is endemic in and about Syracuse as it is likely to be in the greater part of the North American continent. While it is a notorious difficulty to trace contact in these cases, a number of those that have developed in Syracuse seem to support the contact theory rather significantly. In only one instance, however, have two cases occurred in the same family.

In view of the absence of more certain methods for the early detection of susceptibles, and for their immunization, the program dealing with poliomyelitis must rest essentially on methods of quarantine and control of the known cases and contacts. A strong follow-up program, which will, by proper physiotherapy, undertake the salvage of those crippled, suggests itself, also.

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## *Contagious Diseases Among Syracuse School Children*

A study was recently made in Syracuse schools to ascertain at what ages the school children had had certain contagious diseases. Four schools were selected for the study, representing various economic groups and also racial differences. The information was first obtained by the school nurses directly from the children. These statements were then checked with disease histories placed on file when the child entered school, and supplemented by personal knowledge of the nurse or information from the family.

In all, 2,049 children furnished the information and in the aggregate they had had 3,196 cases of the principal contagious diseases, making an average of 1.6 diseases per child. The diseases about which information was obtained included the following: measles, mumps, scarlet fever, whooping cough, chicken-pox, diphtheria, poliomyelitis and typhoid fever. The study showed that nearly half of the contagious diseases for this group of children had been undergone before they were six years old, in other words, during the pre-school period.

Measles, chicken-pox, whooping cough and mumps were found to have been the most prevalent diseases. With the exception of mumps, more than half the cases of these diseases had occurred among children under six. The subject of exposure naturally enters into the question of age at which children have contagious diseases, but from the data submitted there was no opportunity to study this phase of the matter.

These statements are only relative, since to be of real significance the figures should pertain to children who are now all of the same age. The proportion of the latter group,

having had contagious diseases during the pre-school period, would then be smaller since many children now six or seven will certainly have some contagious diseases during the next few years, thus reducing the proportion at the younger ages. The figure, although admittedly limited, is of some importance, however, as pointing to the fact that attempts to immunize against these diseases or to control their spread must begin before the school age. It is because of the great difficulty in reaching this large group of children that health work for them has so long been neglected.

The most startling results may be expected in any community which establishes an adequate health program for pre-school children. Such a program must include—in addition to proper dietary instruction and general health education for mothers—adequate immunization facilities and means for reaching all children of pre-school age.

Some cities have established habit clinics and nursery schools where pre-school children are taught how to play, how to behave, and certain essential health habits, such as the necessity for drinking milk and eating what is set before them. Many cities have extended the facilities of their infant welfare work to include the pre-school child. Many other cities would sanction such an extension of activities, but the number of physicians, nurses and clinics available is seldom sufficient even for the proper care of infants.

For a number of reasons, the health of children between the ages of two and six has been neglected in many communities and as a result—entirely too large a proportion of undernourished children, with numerous physical defects and with histories of contagious diseases, enter our schools each year.

## *Diphtheria in Syracuse*

The Syracuse Department of Health estimates that approximately 10,000 children have been immunized against diphtheria up to the present time. This number probably represents about one-sixth of all children under twenty-one years of age in the city. Since some months must elapse before the toxin-antitoxin treatment becomes effective, the Health Department is of the opinion that very little benefit could have accrued from its immunization campaign prior to the fall of 1923. So far as one can learn, other large cities of New York State have made about the same amount of progress in this work of immunization and therefore comparison of diphtheria case and death rates in these cities for 1923 is more or less valid. New York City may be cited as the only exception in that its immunization campaign was begun earlier and already has unquestionably resulted in fewer cases and fewer deaths.

Syracuse has no excuse for resting on its laurels, so far as a campaign against diphtheria is concerned, if one is to believe the story told by the cases and deaths reported last year. The case incidence from this disease was very high during 1923 and probably will not show any decided reduction until all or nearly all children of school age and of pre-school age have been immunized. The knowledge that diphtheria is now absolutely preventable must be spread in every direction. When parents have acted upon this knowledge and have had toxin-antitoxin administered to their children, then we may expect the case and death rates to be materially lowered. As it is, the city had during 1923 both a high case incidence and a high death rate (per 100,000 population), if a comparison be made with New York State and its large cities.

Why should Syracuse have during 1923 twice as high an incidence as Rochester? Or nearly twice as high as New York State as a whole? Dr. F. W. Sears, State district health officer for Central New York, estimates that Rochester and Syracuse have immunized approximately the same proportion of their children.

What proportion of the persons who had diphtheria in the cities of New York State died of the disease? Or, in other words, what were the cities' case fatality rates? Unfortunately, such rates are available only for the years 1922 and 1923. But there was a great variation in the ratio of deaths to cases. One realizes, of course, that the virulence of the disease controls the case fatality rate, but this is a factor which is in no way measurable. It seems doubtful, moreover, that the virulence of the disease would vary greatly in cities so nearly of the same location.

In general, the average loss among diphtheria patients has been considered to be 5 or 6 per cent of those who contracted the disease. Yet here are cities in New York State in which as high as 10 to 15 per cent of the patients died, while Albany during 1923 lost but 3.6 per cent of its cases. Can this variation be explained by the difference in the virulence of the disease? It hardly seems so. The only other reason for this difference which suggests itself is that of incomplete reporting of cases in those cities which have high case fatality rates combined with a low case incidence.

Complete reporting of all cases reduces the death rate in two ways: (1) By the prompt reporting of cases according to law, the Health Department of a city is often able to assist in the earlier and more accurate diagnosis of many cases of diphtheria, as well as in their control, and in some instances, to advise treatment which will directly tend to

reduce the death rate. (2) By the obvious arithmetical advantage of having a complete number of cases on which to base case fatality rates.

It would appear that Albany and Syracuse have had during 1922 and 1923 a high diphtheria case incidence and a low case fatality rate; the explanation of this fact undoubtedly lies in complete reporting. New York City with the combination of a low case incidence and not very high case fatality rate, demonstrates its progress in diphtheria immunization, but there is no evidence to support the contention that up-state New York cities have made similar progress in this work.

A by-product of prompt and adequate reporting is more accurate mortality statistics for contagious diseases. Some physicians who have failed to report a case on the ground that it might *not* have been diphtheria, might conceivably give some other cause of death on the death certificate as well, a practice which would result in an inaccurate death rate, even if followed in rare instances.

Every one of the six large cities had a lower death rate from diphtheria in 1923 than in 1912. The difference is not always great, though for four cities the 1923 rate is less than half the 1912 rate. Syracuse is not one of these four cities. To what extent this general reduction is due to the increasing use of the Schick test and of toxin-antitoxin is a matter of conjecture.

Moreover, improved medical facilities and knowledge, and the spread of health education throughout the country are bearing fruit. Still, we must realize that with the exception of New York City, 1915 and 1916 were in the main almost as favorable years as 1923. Diphtheria may move in cycles as do so many other diseases.

During 1923, there were reported to the Department of Health 497 cases of diphtheria and twenty-six deaths among Syracuse residents. In addition, twenty-one non-residents were reported as having the disease in Syracuse hospitals and three deaths of non-residents occurred in the city.

While fewer cases have been reported thus far in 1924 than for the corresponding period in 1923, the case fatality rate is slightly higher this year. During the first nine months of last year, 331 cases of diphtheria were reported, as compared with 276 during the same period of 1924. Yet seventeen deaths are recorded this year and only eighteen for last year.

One may conclude that Syracuse has still a large diphtheria problem, but that the Health Department has the problem well in hand. The first step necessary in order to conquer a disease of this character is the prompt reporting of all cases, an achievement which appears to have been effected both in Syracuse and in Albany. The second step is the establishment of well-advertised diphtheria immunization clinics, another accomplishment for which Syracuse may lay claim to credit.

MARY V. DEMPSEY

## *Metropolitan Life Insurance Company Co-operation*

Among national agencies whose co-operation is proving of importance in the Syracuse Demonstration, is the Metropolitan Life Insurance Company. After a conference in April between representatives of the Milbank Memorial Fund, the State Charities Aid Association, and the Metropolitan Life Insurance Company, preliminary plans for the use of Metropolitan machinery in Syracuse to further the objects of the demonstration were developed by Dr. Donald

B. Armstrong of the Metropolitan Home Office Staff, formerly Secretary of the Technical Board.

It was realized that the possibilities in Syracuse were great for extensive popular health education through Metropolitan channels. The Company has had wide experience in popular health education and nursing. Its representatives in Syracuse enter weekly a sufficient number of homes to reach and influence, directly or indirectly, approximately 75 per cent of the city's population. There is thus made available through the insurance company a willing staff of over 100 individuals, trained to co-operate in activities similar to those of the demonstration.

The first step to this end, was a meeting of the Syracuse Metropolitan staff held in July. The methods and purposes of the demonstration were placed clearly before the group of managers and agents at this time by Dr. Thomas P. Farmer, Dr. Joseph C. Palmer, Arthur W. Towne and Dr. Bernard L. Wyatt. Others who addressed the meeting included Dr. Lee K. Frankel and Dr. Donald B. Armstrong, as well as Frederick J. Williams, the Superintendent of the agency staff of the Metropolitan in New York State. Through this meeting, a great deal of enthusiasm was aroused among Metropolitan representatives. Incidentally, Dr. Frankel offered a very substantial prize for each of the three men in the three metropolitan districts in Syracuse who, in the opinion of his manager and of Dr. Farmer, had set the best record in furthering the objects of the demonstration.

The Company then printed a special notice to its policyholders urging their co-operation with the Health Department and the demonstration. This pointed out the importance of the individual's co-operation if the demonstration is to be a success, and if it is to bring to him and to the

community increased health, prolonged life and greater security. This, together with a quantity of special literature prepared by the Health Department, was distributed to all policyholders in Syracuse.

## THE RURAL HEALTH DEMONSTRATION

### *School Medical Examinations in Cattaragus County*

The medical school report covering the first school year of the Cattaraugus County Demonstration has just been completed by Dr. C. A. Greenleaf, Director of the County School Health Service. The Director has accomplished what is seldom accomplished in a single school year; namely, to have every child throughout the County examined. The examinations were made by local school examiners who received explicit instructions from Dr. Greenleaf so that so far as is humanly possible they were made in a uniform and comparable manner.

The cities of Olean and Salamanca were not included in this report which applies specifically to the rural area, so the figures which follow are a fair picture of rural school children in a typical county. The total rural school population examined numbered 7,758, and 11 per cent were found to be free from defects. Among the remainder, there were noted over 15,000 defects, making an average of more than two defects per child.

The kinds of defects and the percentage of each to the total number found were as follows: